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Neuro-Oncology Practice in 2021: Covid-19, telemedicine, and beyond

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While the world is struggling in a pandemic, the neuro-oncological community aims at providing the best possible care for brain tumor patients. The Covid-19 pandemic imposes several additional challenges, including, but not limited to, the need for social distancing practices, travel restrictions, and impaired access to health care and clinical trials. In the current issue of *Neuro-Oncology Practice*, Fonkem and colleagues reviewed telemedicine practices, which have gained increasing interest and use in many areas of clinical medicine (p. 109). At two large institutions, telemedicine helped to recover patient volumes, which had significantly dropped at the beginning of the pandemic due to site closures. While telemedicine will not replace classical on-site visits and in-person consultations, it may represent a helpful tool for the medical care and support of patients with limited mobility or other reasons leading to impaired follow-up, also beyond the Covid-19 pandemic.

Patients are also more and more frequently looking for disease-specific information in the internet. Lim and colleagues performed a study of 100 meningioma websites and determined their content, data of last update, understandability for a general population, and responsiveness upon contact (p. 129). While such websites may be a helpful resource for patients and relatives, the quality of the provided information varies. Physicians may direct patients to selected websites with high-quality content and regular updates.

The MD Anderson Symptom Inventory Brain Tumor Module (MDASI-BT) is a validated patient self-reporting questionnaire that has become a valuable tool in daily practice and clinical trials. Piil and colleagues performed a validation process for the Danish version of this questionnaire in a cohort of 120 patients (p. 137). The results of the study confirm the validity of the Danish questionnaire as well as its utility for patient assessment.

In a related article, Garnier et al. analyzed the quality of patient-reported outcome (PRO) data in randomized controlled trials for glioblastoma patients (p. 148). Although the Consolidated Standards of Reporting Trials (CONSORT) statement was extended with a PRO section, aiming at improving the quality of this reporting, only minor improvements were observed over time in 44 trials. A more thorough analysis of PRO in ongoing and future trials should be sought.

Cognitive impairment is one of the most frequent findings in brain tumor patients, resulting in reduced quality of life. Particularly in patients with a life expectancy of years or even decades, cognitive sequelae caused by the tumor or the administered therapy require intense attention. Weyer-Jamora and colleagues provide an overview of the most frequently affected cognitive domains in patients with lower-grade glioma and discuss rehabilitation strategies that may help to reduce these deficits (p. 117). Cognitive impairment of brain tumor patients is also of considerable importance for relatives. This topic was addressed by Gosselt and colleagues in a survey, which revealed that there might be significant differences between the patients' and relatives' perception of cognitive complaints (p. 160).

The perspective of relatives and caregivers with a focus on the end-of-life phase of glioma patients is reported in an article by Fortunato and colleagues (p. 171). A total of 41 family caregivers completed a structured interview that addressed physical comfort and emotional support, advanced care planning and other aspects. Most caregivers were satisfied with end-of-life care. However, it is important to note that less than 50% of the interviewed persons knew what to do at the time of the patient's death, indicating a need for better patient and caregiver education.

In a similar approach, Jeon and colleagues explored sleep disturbances in patients with malignant brain tumors and their family caregivers (p. 179). The results of the semi-structured interviews revealed that most participants had difficulties in initiating and maintaining sleep. In patients and caregivers, anxiety because of the brain tumor diagnosis, treatment, and caregiver burden were viewed as the underlying causal factors. Similar to the previous article, the results of this analysis point to a need for better patient and caregiver education regarding sleep disturbances and potential coping and treatment strategies.

Radiotherapy remains a cornerstone in the treatment of many brain tumors. However, depending on the tumor entity and other available treatment options, there remain several open questions. Teyateeti and colleagues performed a retrospective analysis of 51 patients diagnosed with a grade 2–4 glioma located in the temporal lobe (p. 190). Patients

underwent irradiation of the parenchymal bed only or the parenchymal and dural resection area. Virtually all patients experienced tumor recurrence, mostly in the parenchymal resection cavity. Isolated dural recurrence was not observed. Median progression-free and overall survival were not different between the two groups, suggesting that omission of dural irradiation may be considered. As correctly noted by the authors, larger and prospective studies are needed to confirm these findings.

Radiotherapy is also part of the standard treatment in patients with newly diagnosed glioblastoma. Al Feghali and colleagues interrogated the National Cancer Database for glioblastoma patients aged 60 or older and analyzed the impact of various factors, including therapeutic management, on patients' outcome (p. 199). As observed in many studies before, KPS was confirmed as a strong prognostic factor and combined radiochemotherapy was associated with better outcome.

Rare brain tumors and molecular alterations only found in small subsets of tumors have gained increasing interest in the past few years as more and more specific treatment options become available that might be beneficial for selected patients. While classical immunohistochemistry is becoming more frequently replaced by molecular analyses, Schittenhelm and colleagues demonstrate that it may still be a helpful and easily applied technique that allows for screening of fibroblast growth factor receptor (FGFR) 3 alterations in glioma specimens, which may subsequently be used for a targeted therapy approach (p. 209).

Pleomorphic xanthoastrocytoma (PXA) is a rare subtype of gliomas and frequently harbors BRAF mutations that may be targeted with specific inhibitors. Dono et al. analyzed a cohort of 470 patients with a PXA (p. 222). Pediatric patients had a more favorable prognosis than adult patients. Larger tumor size was also associated with shorter overall survival. While the retrospective nature of the series did not permit firm conclusions on the activity of different treatments, it seemed that gross total resection might be associated with better outcome whereas the role of radio- and chemotherapy needs to be defined in additional studies.